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Missouri Department of Higher Education

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Governor's Conference explores Missouri's life sciences initiative

The 2001 Governor's Conference on Higher Education, "Missouri's Life Sciences Alliance," brought together 400 leaders from Missouri's higher education community and life sciences industry Dec. 6 in Kansas City to examine the nature of the life sciences industry and to explore what it needs from Missouri higher education.

Following opening remarks by Missouri Coordinating Board for Higher Education Chair Marie Carmichael, Dr. Martha Gilliland, chancellor of the University of Missouri-Kansas City, highlighted some of Kansas City's life sciences activity and introduced the morning's keynote speaker.

Neal L. Patterson, chairman, chief executive officer and co-founder of Cerner Corporation, described Cerner's work as the world's leading clinical health care information technology company. He urged the audience to consider the dynamic, creative possibility of blending new knowledge about diseases with what we know about the genetic structures of a human being. Bioinformatics may be the niche for Kansas City institutions.

"The greatest challenge in a knowledge-based economy, of which the life sciences is a vital and emerging industry in Missouri, is to 'connect the dots,'" said Patterson. "Making connections between ideas and social and economic developments will create the energy necessary for Missouri to become a national leader in the life sciences."



Neal L. Patterson, chairman, chief executive officer and co-founder of Cerner Corporation and opening keynote speaker, (left) is greeted by Dr. Martha Gilliland, chancellor of the University of Missouri-Kansas City.

Missouri's Life Sciences Industry

Also during the opening session, Dr. Walter Plosila, vice president of public technology management at the Battelle Memorial Institute, provided a preliminary assessment of the findings from his study in preparation of the state's strategic plan for life sciences. (The preliminary report is available online at www.cbhe.state.mo.us/pdf/battelle.pdf.)

Among the key ingredients for building a critical mass in the life sciences are engaged universities with active leadership, intensive networking across sectors and with industry, and a workforce and talent pool on which to build and sustain efforts.

As of fiscal year 1999, Missouri lagged in academic life sciences research and development compared to other key states. As a percentage of total academic research and development, Missouri was the most specialized in the life sciences.

See **GOVERNOR'S CONFERENCE**, page 6

Governor recognizes excellence in teaching at annual conference

Gov. Bob Holden honored outstanding faculty from postsecondary schools, colleges and universities in Missouri during the 2001 Governor's Conference on Higher Education at the Kansas City Marriott Downtown.

The 66 Governor's Award for Excellence in Teaching recipients were selected by their respective institutions for their effective teaching and advising, service to the school community, commitment to high standards of excellence and success in nurturing student achievement. 🍷



Gov. Bob Holden presents a 2001 Governor's Award for Excellence in Teaching to Joan Domigan Wentz, a faculty member at Jewish Hospital College of Nursing and Allied Health. Pictured at left: Paula Jerden, director of the Missouri Association of Private Career Schools and Wentz' escort during the awards ceremony.

2001 Governor's Award for Excellence in Teaching Recipients

Bennie A. Adams	St. Louis Community College at Forest Park
Anne Allman	College of the Ozarks
Barbara A. Alt	East Central College
Victor Babu	Kansas City Art Institute
Terry Bichsel	Moberly Area Community College
John M. Burke	St. Louis College of Pharmacy
Donna J. Calvert	Rockhurst University
Catherine Campbell	Cottey College
Michelle Arnopol Cecil	University of Missouri-Columbia
J. Bradley Chance	William Jewell College
Penny R. Clayton	Drury University
David G. Collins	Westminster College
Mary Curtis	Maryville University of Saint Louis
Joyce Cutsinger	North Central Missouri College
Jai N. Dahiya	Southeast Missouri State University
Richard L. Diklich	Longview Community College
Rebecca L. Dye	Culver-Stockton College
Edward Easterling	William Woods University
Jim Eiswert	Northwest Missouri State University
James E. French	Missouri Baptist College
Sally A. Goldman	Washington University
Larry Gragg	University of Missouri-Rolla
Kenneth D. Hahn	Truman State University
Shari Harden	Blue River Community College
Maria Hunt	Avila College
Emilie Wright Johnson	Lindenwood University
Joyce Starr Johnson	Fontbonne College
E. Grant Jones	Evangel University
Karen Jeanne Jones	St. Charles Community College
Roger L. Jungmeyer	Lincoln University
Marsha Keller	Lester L. Cox College of Nursing and Health Sciences
Norman W. Kettner	Logan University
E. Rebecca Limback	Central Missouri State University
Edward A. Malone	Missouri Western State College
Tom R. Maple	Jefferson College

Don McEwen

Kim McHale
Linda Spotts Michael
marsha m. morgan
Timothy R. Morgan
Modene Murphy
James F. O'Brien
Steven Quackenbush
Joan T. Rines
David B. Robertson
Gwen Robertson
Anna Barbara Sakurai
Neil Joseph Sargentini
Herbert C. Schade
Fredna Carlson Scroggins
Donna Shirrell

Scott L. Sigman
Nancy L. Smith
Lois A. Snider
Donna M. Spaulding

Robert E. Stephens
J. Larry Thompson
Jimmie A. Van Alphen
William Wagner

Jerry B. Walters
Patrick Welch
Joan Domigan Wentz

Curtis L. White
Katherine Ann Wildt
Glen D. Woods
Charles Jon Wurrey

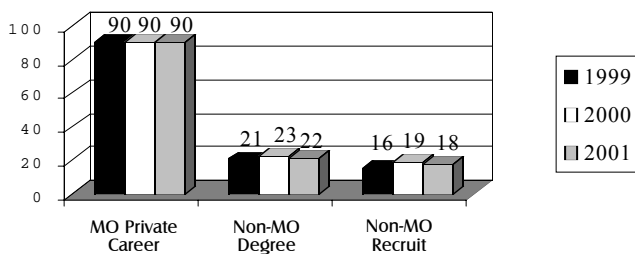
Wentworth Military Academy and Junior College
Columbia College
Maple Woods Community College
Park University
DeVry Institute of Technology
State Fair Community College
Southwest Missouri State University
Central Methodist College
Stephens College
University of Missouri-St. Louis
Penn Valley Community College
Webster University
Kirkville College of Osteopathic Medicine
Crowder College
St. Louis Community College at Meramec
Southeast Missouri Hospital College of Nursing and Health Sciences
Southwest Baptist University
Missouri Southern State College
Hannibal-LaGrange College
St. Louis Community College at Florissant Valley
The University of Health Sciences
Three Rivers Community College
Ozarks Technical Community College
Southwest Missouri State University-West Plains
Mineral Area College
Saint Louis University
Jewish Hospital College of Nursing and Allied Health
Harris-Stowe State College
Missouri Valley College
Linn State Technical College
University of Missouri-Kansas City

Coordinating Board receives annual report of proprietary schools

The Missouri Coordinating Board for Higher Education received the annual report on Missouri's proprietary schools during its December meeting held in conjunction with the 2001 Governor's Conference on Higher Education at the Kansas City Marriott Downtown.

The CBHE Proprietary School Certification Program certifies certain postsecondary education providers to ensure the legitimacy of programs and schools and the availability of financial and educational safeguards for students.

School Certifications by Type and Fiscal Year

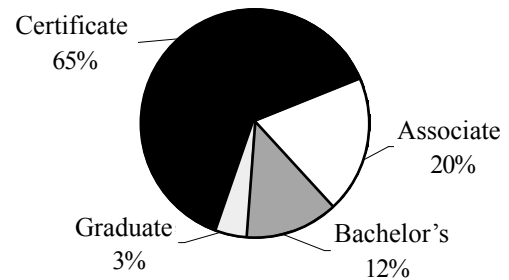


According to the report, for calendar year 2000, enrollment in certified schools increased by approximately 10 percent to a total of 57,498, with 35 percent of proprietary school students enrolled in degree programs. Minority enrollment comprised 26 percent of the total enrollment in proprietary schools, and the representation of African-Americans in the proprietary school sector is significantly higher than in other higher education sectors. The number of students who completed a program in 2000 was 23,525, a 6 percent increase since 1999. Graduates enjoyed success after completing their instructional programs, with 75 percent employed in training-related jobs and about 6 percent continuing their education.

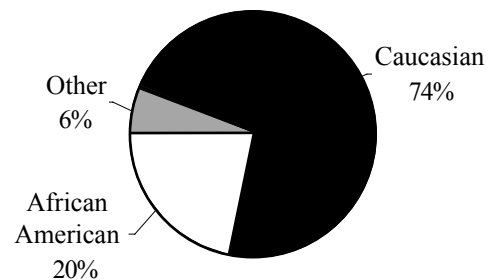
Also during the meeting, the Coordinating Board endorsed the subdistricting plan for East Central College in Union. The subdistricting plan divides the college's district into subdistricts for the election of trustees.

The board also heard a report on the House Interim Subcommittee on higher education appropriations, discussed proposed 2002 legislative initiatives related to higher education and set its 2003 meeting dates. 🍷

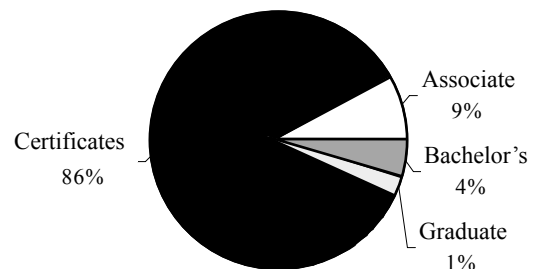
Enrollment by Program Level



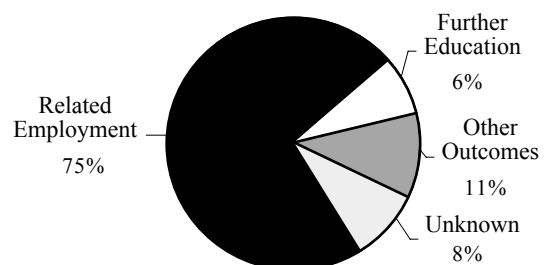
Enrollment by Ethnicity



Program Completion by Level



Outcomes for Program Completers



ATOM reaches another milestone

MOSTARS' Automated Transfer of Money system recently eclipsed its previous record for single-day disbursement volume for the fifth consecutive year.


ATOM is an automated process that allows MOSTARS to streamline the delivery of student loan funds. Rather than sending an individual paper check for each student receiving assistance, ATOM electronically transfers the funds from multiple lenders in one transmission for each institution. As a result, the ATOM process allows more timely delivery of loan funds to students.

On Jan. 2, ATOM processed 9,409 disbursements totaling more than \$18.2 million. This exceeded

ATOM's previous single-day disbursement record of \$15.7 million set on Jan. 4, 2001.

MOSTARS will continue to enhance the ATOM system and its other services to better serve Missouri's

students, postsecondary institutions and lenders.

For more information about ATOM or other MOSTARS services, contact Keith Broadus at (573) 526-0876 or keith.broadus@mocbhe.gov. 

ATOM processed 9,409 disbursements totaling more than \$18.2 million.

Student Financial Assistance

Early Awareness and Outreach



Customer Service and Support

Default Prevention and Debt Management

MOSTARS provides free information on student financial assistance and postsecondary education in Missouri. Call (800) 473-6757 or visit our web site at www.mostars.com.


Gilliland appointed to White House science council

President George W. Bush recently appointed Dr. Martha Gilliland, chancellor of the University of Missouri-Kansas City, to the President's Council of Advisors on Science and Technology.

The PCAST, a presidential advisory panel within the White House Office of Science and Technology Policy, is composed of leaders from industry, education and technology who are selected for their diverse perspectives and uniquely strong credentials as experts in science, technology, education and research.

The 22-member PCAST advises the president on issues involving science and technology and their role in achieving national goals, and assists the National Science and Technology Council in securing private sector participation in its activities.

Gilliland has published numerous articles and books

on energy and environmental policy. She holds a doctorate in environmental engineering/systems ecology from the University of Florida, a master's degree in geophysics from Rice University, and a bachelor's degree in geology and mathematics from Catawba College in Salisbury, NC. 



Dr. Martha Gilliland, Chancellor, University of Missouri-Kansas City

Life Sciences at Missouri's Colleges and Universities

Facts and Figures

Missouri Colleges and Universities

- ◆ Public four-year colleges and universities 13
 - ◆ Public two-year campuses 19
 - ◆ Independent colleges and universities. 25
- All but two of these 57 colleges and universities offer certificate and/or degree programs in the life sciences.

Distribution of Life Sciences Programs

	All Programs	Life Sciences
Certificates	537	66
Associate degrees	626	162
Baccalaureate degrees	2,114	211
Master's degrees	642	97
Post-master's certificates	52	16
Doctorates	187	38
First Professional degrees	33	11

Certificates and Degrees Conferred in 2000

Certificate/Degree Type	Total number conferred at Missouri colleges and universities	Number of degrees (and % of total) conferred in the life sciences
Certificates	1,790	537 (30.0%)
Associate degrees	8,021	1,169 (14.6%)
Baccalaureate degrees	28,647	3,494 (12.2%)
Post-baccalaureate degrees	83	32 (38.6%)
Master's degrees	12,493	1,168 (9.3%)
Post-master's degrees	159	8 (5.0%)
Doctorates	726	162 (22.3%)
First Professional degrees	1,366	659 (48.2%)
Total	53,285	7,229 (13.6%)

Coordinating Board secretary retires

After 26 years as secretary to the Missouri Coordinating Board for Higher Education, Joy Casada retired Dec. 31.

Among her duties, Casada oversaw the preparation of the board book before each Coordinating Board meeting and worked with the colleges and universities to make the arrangements for the meetings.

Coordinating Board members presented Casada a special token of their appreciation for her many years of service during the Dec. 6 Governor's Conference on Higher Education.

The public is invited to a farewell reception honoring Casada from 4 to 6:30 p.m. on Feb. 6 at the Department of Higher Education's Annex Building. 🍷



Left to right: Joy Casada, secretary to the Missouri Coordinating Board for Higher Education, is recognized for her many years of service by Coordinating Board Chair Marie Carmichael and Gov. Bob Holden during the 2001 Governor's Conference on Higher Education.

GOVERNOR'S CONFERENCE, from page 1



Left to right: Dr. Kala M. Stroup, commissioner of higher education, introduces Dr. Walter Plosila, vice president of public technology management for the Battelle Memorial Institute; Dr. Roger Beachy, president of the Donald Danforth Plant Science Center; and Dr. Richard Wallace, chancellor of the University of Missouri-Columbia.

Plosila also reported that Missouri is competitive in funding from the National Institutes of Health in per capita terms and growth rate, due in part to Washington University's high national ranking for obtaining research grants.

Three key areas of life sciences research strengths are human disease treatment, plant and agriculture-related sciences, and environmental technologies. Part of the vision for Missouri is that it will be among the world's leaders in plant, animal and human health research. The mission of Missouri's life sciences is to invest from many sources (e.g., state, federal, philanthropic and industry) to enhance its research base through private and public partnerships to ensure world class leadership in core research fields. Missouri also will encourage collaboration among its research institutions, industry and established value-added intermediary organizations. Technology commercialization efforts will be expanded to increase the rate of commercial application from research, resulting in firms, jobs and wealth for the state and its citizens.

According to Plosila, Missouri is at a crossroads in its life sciences endeavors, and the coming years will determine its path for the future. The research base is growing with the strength of Washington University, the University of Missouri and new research organizations such as the Stowers Institute for Medical Research and the Donald Danforth Plant Science Center. Proposed strategies to strengthen Missouri's life sciences include enhancing the state's higher education research and development infrastructure while increasing industry collaboration; creating a critical mass of life sciences companies; creating a supportive business, tax and regulatory climate for life sciences companies; and

increasing the pool of students and future workers interested in pursuing opportunities in the life sciences.

Following Plosila's report, Dr. Roger Beachy, president of the Donald Danforth Plant Science Center, and Dr. Richard Wallace, chancellor of the University of Missouri-Columbia, described their organizations' life sciences work. Beachy noted Missouri's strengths and weaknesses in the plant sciences industry and explained that research in the plant sciences requires training in biology, biochemistry, chemistry and other similar areas of science.

Wallace highlighted the University of Missouri-Columbia's plans for a life sciences center, which is scheduled to open in 2004. He said the next steps in strengthening the university's life sciences agenda include continuing the emphasis on plant science, expanding biomedical research and increasing partnerships.

Other life sciences industry leaders explained what they need from Missouri colleges and universities during the morning's smaller breakout sessions.

The Economic Development Factor

Joseph Driskill, director of the Missouri Department of Economic Development, described the economic impact of a thriving life sciences industry.

Missouri currently has 1,250 life sciences-related firms that provide 170,000 direct jobs and 266,000 indirect jobs, with a total economic contribution of \$23 billion, or 13.5 percent of Missouri's total economic picture.

According to Driskill, forging stronger partnerships between higher education and the life sciences industries can increase these benefits to the state's economy. Higher education's role in improving Missouri's life sciences industry also includes promoting math and science courses, teacher and technical education, lifelong learning, technology transfer and the commercialization of new ideas.

The High Tech. Factor

Frank Stokes, chair of the Missouri Technology Corporation, discussed Missouri's best chances for thriving in the new economy. Participants in this



Joseph Driskill, Director, Missouri Department of Economic Development

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GOVERNOR'S CONFERENCE, from page 6



Frank Stokes, Chair, Missouri Technology Corporation

session recommended actions to support and accelerate the development of Missouri's life sciences cluster. These actions fall into the categories of building and enhancing linkages, attracting and retaining the best people and gaining full value from the potential of the state's community colleges.

The University Research Factor

Dr. Jim Spigarelli, president and chief executive officer of Midwest Research Institute, and Dr. Stephen Lehmkuhle, vice president for academic affairs for the University of Missouri System, addressed the questions of what university strengths are most relevant to the high tech. clusters being developed in Missouri and what is needed to improve these strengths.

Spigarelli and Lehmkuhle stated that the universities have the basic infrastructure in place for research but need to make the research more applicable. One of the reasons for the increase in applied research discoveries is a greater exchange along interdisciplinary lines. To continue that growth, universities must recognize industry's knowledge of



Dr. Stephen Lehmkuhle, Vice President for Academic Affairs, University of Missouri System

the marketplace potential, reorganize technology transfer to be more pro-active and respond to the commercial application of research. Spigarelli and Lehmkuhle said that cooperation and collaboration are imperative if university research is going to succeed.



Left to right: Dr. Francois Sauer, president and chief executive officer of the Brush Creek Enterprise Center; Dr. Wayne Huebner, vice provost for research at the University of Missouri-Rolla; and Clifford Illig, vice chairman of Cerner Corporation, join in the discussion of the economic impact of the life sciences industry.



Dr. John Park, chancellor emeritus of the University of Missouri-Rolla, president of Tortran Corporation and chair of the Missouri Life Sciences Research Committee, outlines the guidelines and goals of the committee in awarding \$21.5 million in life sciences research grants.

The Strategic Alliance Factor

Dr. John Park, chancellor emeritus of the University of Missouri-Rolla, president of Tortran Corporation and chair of the Missouri Life Sciences Research Committee, outlined the guidelines, progress and goals of the committee in awarding \$21.5 million in life sciences research grants. He stressed the importance of colleges and universities forming alliances to maximize Missouri's research capacity in the life sciences. Park said that tremendous opportunity exists right now, and universities need to move quickly in submitting funding proposals and building alliances. Grant proposals must describe the role of the institutions and show the potential impact on the well being of the economy and improved quality of life. The grant funds are scheduled to be distributed April 2.

See **GOVERNOR'S CONFERENCE**, page 8

GOVERNOR'S CONFERENCE, from page 7



Marcia Mellitz, President, Center for Emerging Technologies

The Technology Transfer Factor

Marcia Mellitz, president of the Center for Emerging Technologies, described the work of the center in providing business expertise, highly technical facilities and specialized services that feed the growing advanced technology industry in the St. Louis area. The center has focused its efforts on laying the infrastructure and venture capital needed to keep advanced technologies in the state. Now, more than ever before, there is a strong push toward commercialization of university-generated research. Mellitz said that technology transfer provides considerable benefits, including the ability to reap income from technology licensing fees and the continuation of sponsored research within institutions due to publicity. She said universities must continue to be aware of their role in the economic development of the state.

The Workforce Development Factor

Dr. John M. Houghton, president of JMHA Technology Management Group, discussed the role of the state's colleges and universities in ensuring the high-skilled workforce necessary for the state to be a leader in the life sciences industry. He noted the state's assets related to workforce development and the life sciences, including a strong corporate research and development presence, recognized research universities, dedicated research faculty, an advantageous geographical location and developing



Dr. John M. Houghton, president of JMHA Technology Management Group, leads the conference discussion of the role of the state's colleges and universities in ensuring a highly skilled workforce for the life sciences industry.

regional clusters of life sciences efforts. He reiterated the importance of university research and a multi-disciplinary approach as well as partnerships between universities and the life sciences industry. Participants in the discussion also noted the need to fully recognize the state's existing assets so that they are not underutilized; the importance of community colleges in training research technicians, because every research position requires technically trained support staff; and the importance of math and science at the high school and college levels, especially in teacher education.

Luncheon Session

Quentin Wilson, Gov. Bob Holden's cabinet director, delivered the luncheon remarks for the governor, who was recovering from laryngitis. He congratulated the colleges and universities for the recognition Missouri has received as a result of their hard work. He acknowledged the difficulties of the current economic climate but encouraged the colleges and universities to view the challenge as an opportunity to improve the higher education system.



Left to right: Dr. Manuel Pacheco, president of the University of Missouri System, invites Gov. Bob Holden and Quentin Wilson, Gov. Holden's cabinet director, to the podium for the luncheon address.

Gov. Holden believes the life sciences is an area that holds great potential for Missouri's future economic prosperity and a better way of life for its citizens. He congratulated the 400 conference participants from the colleges and universities and the life sciences industry for working together to promote this important industry.

Holden then recognized outstanding faculty from 66 postsecondary schools, colleges and universities in Missouri with the 2001 Governor's Award for Excellence in Teaching.

See **GOVERNOR'S CONFERENCE**, page 9

State officials launch new effort to boost Missouri tourism

Missouri Lt. Gov. Joe Maxwell and Tourism Commission Chairman Louis P. Hamilton recently unveiled the Rediscover Your Missouri initiative, designed to bolster Missouri's \$12.9 billion tourism industry. The Rediscover Your Missouri initiative will involve special programs to promote Missouri destinations.

Missouri's postsecondary institutions are asked to help by spreading the message through special newsletter articles, alumni publications, and other communications and by planning special events to encourage their students, alumni, faculty and staff to spend time and money in Missouri.

Missouri offers a variety of attractions, such as:

- college and university events,
- unique art and historical collections on campuses and in museums around the state,
- the new Wonders of Wildlife Museum in Springfield,
- the Country Club Plaza in Kansas City,
- a variety of professional and other sports teams,
- the St. Louis Science Center and Missouri Botanical Garden,
- historical sites throughout the state and
- many lakes, rivers and state parks.

Consumers can call (800) 519-4800 or visit www.VisitMO.com for a free copy of the Official Missouri Vacation Planner. 📖



GOVERNOR'S CONFERENCE, from page 8



Dr. William P. Duncan, Acting President, Kansas City Area Life Sciences Institute

Closing Session

Dr. William B. Neaves, president and chief executive officer of the Stowers Institute for Medical Research, presented the closing address of the conference after introductory remarks by Dr. William P. Duncan, acting president of the Kansas City Area Life Sciences Institute.

Neaves said the mission of the Stowers Institute is to seek more effective ways of preventing and curing disease through basic research on the genes and proteins that control the fundamental processes of life.

The attraction of top scientists, the importance of research partners and a positive working environment are the critical ingredients to success. Neaves emphasized that the Stowers Institute will not recruit researchers away from universities. Instead, the institute will recruit graduates to staff the institute, thereby leading to growth opportunities



Dr. William B. Neaves, president and chief executive officer of the Stowers Institute for Medical Research, describes the institute's mission during the closing address of the conference.

for the state. He said that strong research partnerships among different scientific areas – that previously were never dreamed of – are being formed and that he anticipates substantial collaborative opportunities for university faculty. 📖



Coordinating Board for Higher Education members as well as college and university presidents and chancellors tour Kansas City's Stowers Institute for Medical Research. The Stowers Institute hosted the Missourians for Higher Education annual meeting, held in conjunction with the 2001 Governor's Conference on Higher Education.

CBHE *Calendar*

CBHE and Presidential Advisory Committee Meetings

February 7, 2002
Lincoln University,
Jefferson City

CBHE and Presidential Advisory Committee Meetings

April 11, 2002
Columbia College,
Columbia

CBHE and Presidential Advisory Committee Meetings and Workshop for Trustees

June 6, 2002
East Central College,
Union

CBHE and Presidential Advisory Committee Meetings

October 10, 2002
Harris-Stowe State College,
St. Louis

Governor's Conference and CBHE Meeting

December 5, 2002
Holiday Inn University Plaza Hotel,
Springfield

CBHE and Presidential Advisory Committee Meetings

February 6, 2003
Jefferson City

CBHE and Presidential Advisory Committee Meetings

April 10, 2003
Truman State University,
Kirksville

CBHE and Presidential Advisory Committee Meetings

June 5, 2003
William Jewell College,
Liberty

CBHE and Presidential Advisory Committee Meetings

October 9, 2003
Moberly Area Community College,
Moberly

Governor's Conference and CBHE Meeting

December 11, 2003
St. Louis

CBHE *News*

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FIRST CLASS

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